S/519/60/000/008/014/031
D051/D113

AUTHORS: Kirillova, I. V. and Sorskiy, A. A.

TITLE: On the method of compiling a seismic zoning map on a 1:1,000,000 scale, the Caucasus region serving as an example

SOURCE: Akademiya nauk SSSR. Sovet po seysmologii. Byulleten', no. 8, Moscow, 1960. Voprosy seysmicheskogo rayonirovaniya, 121-124

TEXT: The authors present for the Caucasus and adjacent territories a 1:1,000,000 scale map of seismic zoning which they consider as the first step in compiling a really valuable seismic map of this region, satisfying the needs of both civil and industrial engineering. The map is based on comprehensive research consisting in (1) an analysis of seismostatistical data, (2) an analysis and generalization of geological data, and (3) a generalization of data on ground and geomorphological conditions of populated places. In this way, the authors succeeded in compiling a map which does not only show zones of different seismic activity, but also population density, and, on the basis of rock types and relief characteristics, seven basic categories of geological engineering conditions. The seismic zones fall

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into three categories: areas of high, medium, and weak seismicity. Zones exhibiting a number of geological indices of tectonic processes, i.e. zones where two types of deep structures and faults usually intersect, were classified as areas of high seismicity. The second class covers areas where an activation of zones of deep faults, but mainly faults of one seismogenetic stage was observed. The earthquakes of these zones reached intensity 7. Areas of weak seismicity are characterized by the complete absence or extinction of the activity of zones of deep faults. The article contains a number of detailed seismic and structural characteristics of the Caucasus region. There are 3 figures.

ASSOCIATION: Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth, AS USSR).

S/519/60/000/008/015/031
D051/D113

AUTHOR: Kirillova, I.V.

TITLE: On seismic conditions in Transcaucasia, Turkey, and Iran

SOURCE: Akademiya nauk SSSR. Sovet po seysmologii. Byulleten', no. 8, Moscow, 1960. Voprosy seysmicheskogo rayonirovaniya, 125-130

TEXT: A comparative study of the seismic conditions of the Taurian-Caucasian section of the Alpine folded zone is conducted. For this purpose, the author compiled a map of the seismicity of the Caucasus and the countries on its border. This map was based on seismic maps for Turkey and Iran compiled by foreign seismologists, seismogeological data on the Caucasus presented by Ye. I. Byus and G.P. Gorshkov, and more recently available data. A map with the epicenters of earthquakes which occurred in the Caucasus, Turkey and West Iran from 1938-53 was also used. Tectonically, this territory is characterized by two more or less rectangularly intersecting systems of alternating folds and depressions, one of them directed from east to west and the other from north to south, approximately. Its general seismicity follows these

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lines. The author draws the following conclusions: (1) the observation previously made in the Caucasus that seismicity is prevalent along the border sections of zones of north-south directed elevations has been confirmed. (2) Seismicity is more intense in regions of active and repeated transformation of the tectonic structure as well as in regions of pronounced differentiation of recent tectonic movements. Some Turkish seismic data are given, substantiating the author's opinion that the faults observable from the Earth's surface play only a secondary role in calculating the seismicity of the area. The author mentions scientists V.V. Belousov, V. Ye. Khain and N.S. Shatskiy in connection with tectonic problems. There are 2 figures and 10 references: 4 Soviet and 6 non-Soviet-bloc. The reference to the English language publication reads as follows: A.T. Wilson, Earthquakes in Persia, Bull. of the School of Oriental Studies Lond.Inst., v. VI, p. 1, 1930.

ASSOCIATION: Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth of the AS USSR)

KIRILLOVA, I.V.

P. Fourmarier's last works on cleavage (schistosity). Biul.MOIP.Otd. geol. 35 no.2:132-138 Mr-Ap '60. (MIRA 14:4)
(Rocks—Cleavage)

KIRILLOVA, I.V.

Transverse differentiation of present-day tectonic movements in the southern slope of the eastern Caucasus. Biul. MOIP geol. 36 no.1:24-39 Ja-F '61. (MIRA 14:5)
(Caucasus—Geology, Structural)

KIRILLOVA, I.V.

S/619/61/000/017/001/002
D239/D302

AUTHORS: Medvedev, S.V., Bune, V.I., Vvedenskaya, N.A., Gayskiy, V.N. Kirillova, I.V., Nersesov, I.L., Riznichenko, Yu.V., Savarenskiy, E.F. and Sorskiy, A.A.

TITLE: Instructions for regional seismological summaries

SOURCE: Akademiya nauk SSSR. Institut fiziki Zemli. Trudy no. 17 (184) Moscow 1961. Voprosy inzhenernoy seysmologii no. 5, 128-145

TEXT: These instructions were confirmed by the director of the Institute of Geophysics AN SSSR, M.A. Sadovskiy, on February 27, 1961. Their objective is clearly to secure a uniform system of recording all seismological data pertinent to building construction, obtained in future in the USSR. The instructions are divided into six parts, containing 64 numbered articles, the following being an indication of the scope of each part: 1) General

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Section. This defines the purpose and scope of the work. The seismological map of the USSR established in 1957 is being kept up to date by continuing observations. Its scale is 1 : 5,000,000. The map is to be used to make seismological forecasts both for the epicentral zone and for the whole earth's surface. 2) Instrumental data on earthquakes. This is defined as data obtained now from both fixed and expeditionary stations as opposed to the study of past earthquakes. Methods of classification by magnitude, precision of epicentral location and frequency of recurrence are defined. 3) Engineering seismology. Under this heading is defined the format of an atlas of strong earthquake with isoseismals. This should be on a scale of 1: 1,000,000. It is also hoped to include data on the energy density distribution of the frequency spectra. 4) Seismogeological data. Since some regularity is discernible in the distribution of shocks, a "seismotektonic" map should be a possibility. This would be particularly helpful in regions where seismological data up to this time are

sparse. Gravitational data could also be useful here. 5) Procedures for making seismological summary maps and their documentation. These are to be of two types, corresponding to 1 and 3, above, i.e. seismological maps and maps of isoseismals showing energy and attenuation characteristics of the region. The way in which these should be prepared is described in considerable detail, together with some guidance about what is envisaged for the seismotektonic maps. 6) Arrangement, duration of and participants in the fulfilment of the project. The names and addresses of the participating institutions for each region are given; the end of the first term will be at the end of 1962. The map is expected from the AN SSSR (AS USSR) in 1963. There are 60 Soviet-bloc references

Card 3/3

VESELOV, M.G.; ANTONOVA, I.M.; BRATTSEV, V.F.; KIRILLOVA, I.V.

Tables of the parameters of analytic wave functions of atoms and ions. Part 1. Opt. i spektr. 10 no.6:693-696 Je '61. (MIRA 14:8)
(Functions, Analytic) (Wave mechanics)

KIRILLOVA, I.V.

Problem concerning the "active" or "passive" behavior of rocks in the folding process. Dokl.AN SSSR 144 no.1:201-203 My '62. (MIRA 15:5)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR. Predstavleno akademikom A.L.Yanshinym.

(Geology, Structural)

PETRUSHEVSKIY, B. A., geolog; BELOUSOV, V. V., geolog; GZOVSKIY, M. V., geolg; GORYACHEV, A. V., geolog; KIRILLOVA, I. V., geolog; KRESTNIKOV, V. N., geolog; RASTVOROVA, V. A., geolog; REZANOV, I. A., geolog; SORSKIY, A. A., geolog.

Geologic principles of seismis division into districts. Studii astron seismol 6 no.2:181-186 '61.

1. Institut fiziki Zemli AN SSSR.

KIRILLOVA, I.V.

Volumetric expansion of rocks, a possible cause of tectonic deformations. Izv.AN SSSR.Ser.geol. 28 no.1:93-101 Ja '63. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR, Moskva.
(Geology, Structural)

KIRILLOVA, I.V.; VESELOV, M.G.; BRATTSEV, V.F.

Tables of the parameters of analytic wave functions of atoms and ions. Part 2. Opt. i spektr. 15 no.1:3-8 Jl '63. (MIRA 16:8)

(Wave mechanics)

L 17792-63 [illegible] AFFTC/ASD/IJP(C)/SSD Pab-4

ACC NR AP3005833 S/0051/63/015/002/0145/0147

AUTHOR: Kirillova, I.V.; Veselov, M.G.; Brattsev, V.F.

TITLE: Tables of parameters for the analytic wave functions of atoms and ions

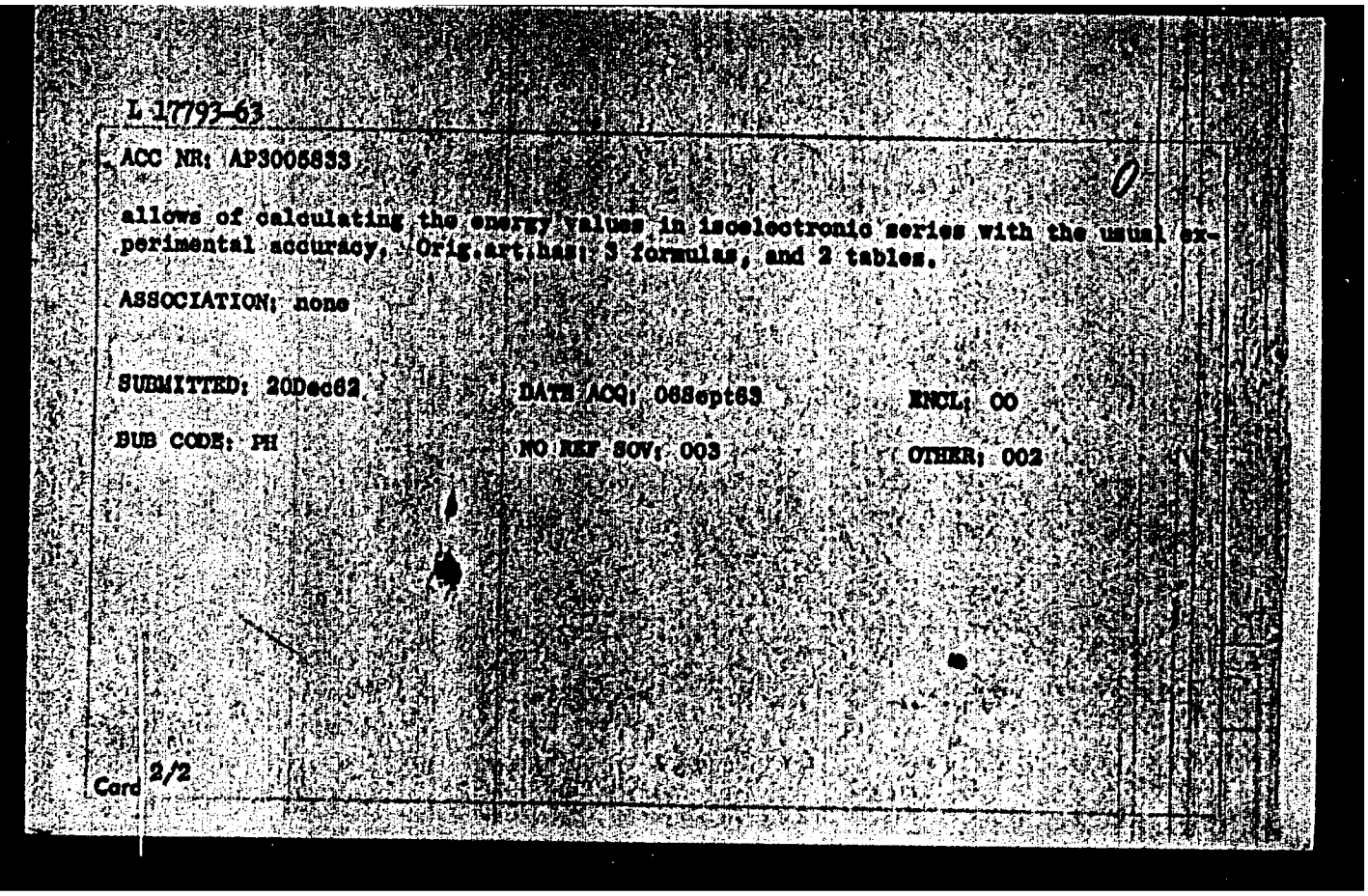
SOURCE: Optika i spektroskopiya, v.15, no.2, 1963, 145-147

TOPIC TAGS: wave function, spectroscopic term, atomic configuration, energy level

ABSTRACT: The paper gives the results of more accurate calculations refining earlier computations (M.G.Veselov, I.M.Antonova, V.F.Brattsev and I.V.Kirillova, Optika i spektroskopiya, 10, 6, 1961 and I.V.Kirillova, M.G.Veselov and V.F.Brattsev Optika i spektroskopiya, 15, 3, 1963) of some terms of the configuration $1s^2 2p^{k+2}$. The better approximation was made by combining the above terms with terms of the $1s^2 2p^{k+2}$ configuration and using the two-configuration approximation. The wave functions in the two-configuration approximation were written in the usual form as the sum (with coefficients) of the wave functions of the equivalent terms of the ground state and excited configurations. The new results are tabulated. Use of the calculated coefficients in the appropriate semiempirical formulas

Card 1/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722710005-7"



L 17793-63

ACC NR: AP3005833

allows of calculating the energy values in isoelectronic series with the usual experimental accuracy. Orig.art.has: 3 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 20Dec62 DATE ACQ: 06Sept63 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 002

Card 2/2

KIRILLOVA, I.V.; CHERTKOVA, Ye.I.

Modeling tectonic deformations by means of directed extension of volume. Izv. AN SSSR, Ser. geofiz. no.7:1037-1048 Jl '64. (MIRA 17:7)

1. Institut fiziki Zemli AN SSSR.

KIRINOV, [illegible].

[illegible] characteristics of clay rocks which are necessary to take into account in tectonic construction. Biul. MOIP. Otd. geol. 40 no.3:27-33 My-Je '65. (MIRA 18:8)

L 25541-66 EWT(1)/EWA(h) GW

ACC NR: AP6007875 SOURCE CODE: UR/0387/66/000/002/0053/0062

AUTHOR: Kirillova, I. V.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Some transformations of rocks under tension and possible geophysical consequences

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 2, 1966, 53-62

TOPIC TAGS: [redacted], tensile stress, seismic wave, petrology, plasticity

ABSTRACT: The author reviews the literature on the physical properties of rocks with particular emphasis on the velocities of seismic waves in rocks as an important parameter for interpreting geological and geophysical data. It is shown that when a laminar medium with distinct layers of varying plasticity is subjected to tensile forces, areas of decompaction may be formed. This may affect the processes of internal transformation in the rocks resulting in changes in their physical properties and mineral composition in these areas. It is possible that this is one of the reasons for localized horizontal nonhomogeneities in layers of the earth's crust and in the surface layers of the upper mantle which must be taken into account in selecting the most probable models for interpreting geophysical data. A comprehensive study of changes in

UDC: 551.24:550.3

Card 1/2

L 25541-66

ACC NR: AP6007875

the basic parameters of rocks in natural models as well as various materials in artificial multilayer models under various stress fields is necessary for a better interpretation of geophysical (especially seismic) data. Orig. art. has: 6 figures.

SUB CODE: 08/ SUBM DATE: 21Dec63/ ORIG REF: 023/ OTH REF: 014

Card 2/2 ULR

KIRILLOVA, K. (Ogudnevo, Moskovskoy oblasti)

New look of the plant. Mest.prom.i khud.promys. 1 no.2/3:17-18 N-D '60. (MIRA 14:4)
(Moscow Province--Metal workers)

KIRILLOVA, K.I. (Mytishchi, Moskovskaya oblast')

The way to health. Zdorov'e 5 no.3:22 Mr '59. (MIRA 12:3)
(PHYSICAL FITNESS)

KUKHTIN, V.A.; KIRILLOVA, K.M.

Some new types of the Arbuzov rearrangement. Part 13: Interaction of trialkyl phosphites with o- and p-nitrobenzaldehydes. Zhur. ob.khim. 31 no.7:2226-2233 Jl '61. (MIRA 14:7)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofotoinstituta.
(Phosphorous acid) (Benzaldehyde)

KUKHTIN, V.A.; KIRILLOVA, K.M.

Thermal decomposition of the products of the addition of trialkylphosphites to diacetyl. Dokl. AN SSSR 140 no.4:835-836 O '61. (MIRA 14:9)

1. Kazanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta. Predstavleno akademikom A.Ye. Arbuzovym.
(Phosphorus organic compounds)

KUKHTIN, V.A.; VOSKOBOYEVA, T.N.; KIRILLOVA, K.M.

Some new types of the Arbuzov rearrangement. Part 15: Addition of trialkyl phosphites and diethyl phosphites to 1,2-cyclohexanedione. Zhur.ob.khim. 32 no.7:2333-2338 Jl '62. (MIRA 15:7)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofotoinstituta.
(Rearrangements (Chemistry)) (Phosphorous acid)
(Cyclohexanedione)

KUKHTIN, V.A.; KIRILLOVA, K.M.; SHAGIDULLIN, R.R.

Structure of products of addition of trialkyl phosphites to α-diketones. Zhur.ob.khim. 32 no.2:649-650 F '62. (MIRA 15:2)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofoto-instituta.

(Phosphorous acid)
(Ketones)

KUKHTIN, V.A.; KIRILLOVA, K.M.; SHAGIDULLIN, R.R.; SAMITOV, Yu.Yu.; LYAZINA, N.A.; RAKOVA, N.F.

Some new types of the Arbuzov rearrangement. Part 14: Investigation of the products of addition of trialkyl phosphites to diacetyl by physical methods. Zhur.ob.khim. 32 no.6:2039-2046 Je '62. (MIRA 15:6)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofotoinstituta.
(Phosphorous acid) (Butanedione)

KIRILLOVA, K.M.; KUKHTIN, V.A.

Some new types of the Arbuzov rearrangement. Part 16: Addition of trialkyl phosphites to 1,2-naphthoquinone. Zhur.ob.khim. 32 no.7:2338-2340 Jl '62. (MIRA 15:7)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofotoinstituta.
(Rearrangements (Chemistry)) (Phosphorous acid)

KUKHTIN, V.A.; KIRILLOVA, K.M.

New types of the Arbuzov rearrangement. Part 17: Refractions of bonds and the atomic refractions of phosphorus and its pentavalent compounds. Zhur.ob.khim. 32 no.9:2797-2800 S '62. (MIRA 15:9)

1. Kazanskiy filial nauchno-issledovatel'skogo kinofotoinstituta.
(Phosphorus compounds) (Rearrangements (Chemistry))

B/020/63/149/002/016/028
B108/B186

AUTHORS: Kirillova, K. M., Kukhtin, V. A., Sudakova, T. M.

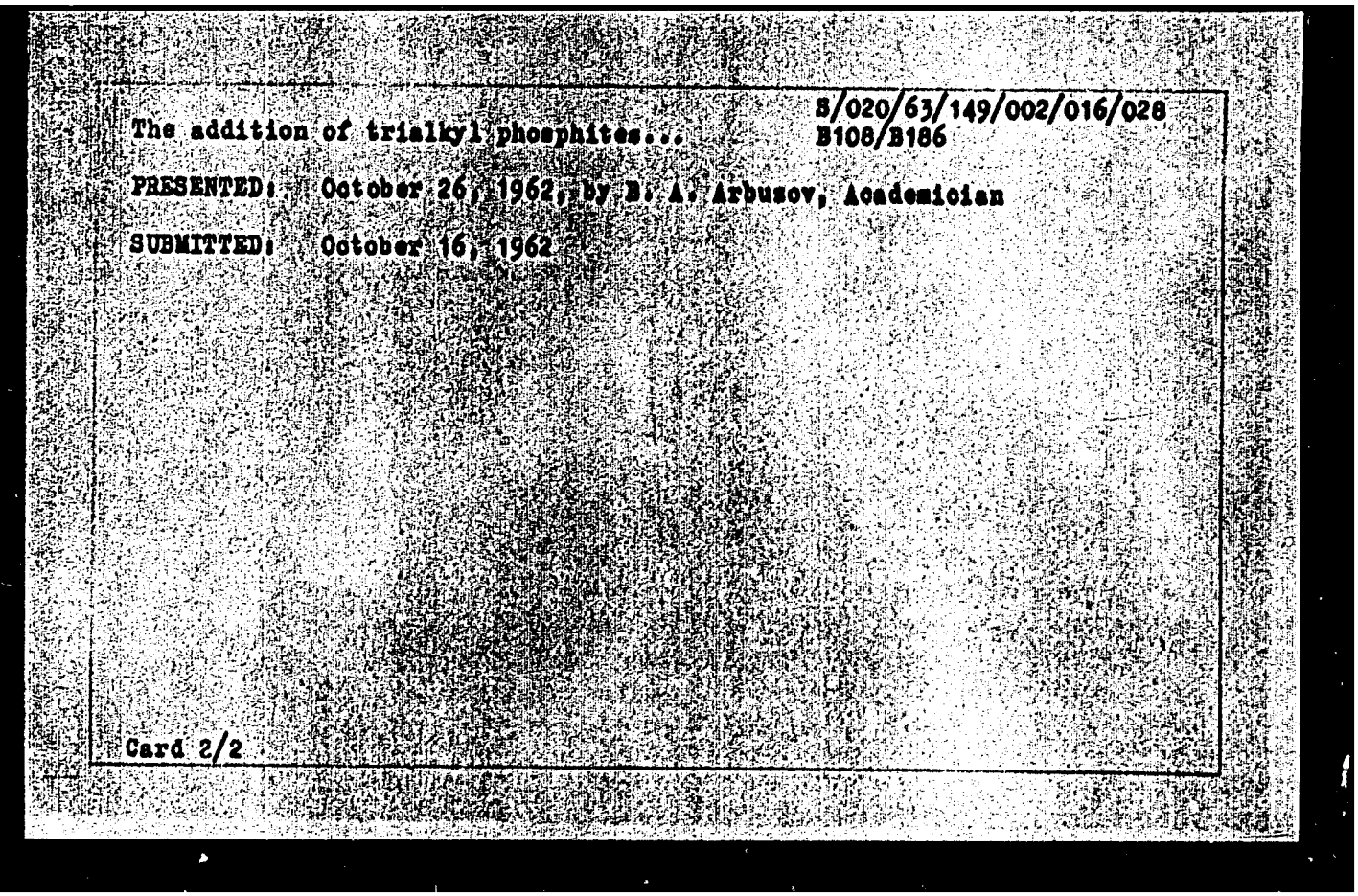
TITLE: The addition of trialkyl phosphites to acetylene carboxylic acids

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 2, 1963, 316 - 317

TEXT: The action of trialkyl phosphites on acetylene carboxylic acids which together form a C≡C-C=O system was studied. Both propiolic and tetrolic acid form colorless liquids with trialkyl phosphites. An analysis of the infrared spectra of these compounds showed that they are esters of the corresponding acids. One distillation of the reaction products yields fractions with a wide boiling range, but after a second distillation the resulting products have a clear boiling point. It is possible that two isomeric forms result from the reactions, the less stable of which is converted into the other, more stable form on being heated (distillation). There is 1 table.

ASSOCIATION: Kazanskiy filial Nauchno-issledovatel'skogo kinofotoinstituta (Kazan' Branch of the Scientific Research Institute of Motion Picture Photography)

Card 1/2



The addition of trialkyl phosphites... S/020/63/149/002/016/028
B108/B186

PRESENTED: October 26, 1962, by B. A. Arbuzov, Academician

SUBMITTED: October 16, 1962

Card 2/2

KIRILLOVA, K.M.; KUKHTIN, V.A.

New types of Arbuzovis rearrangement. Part 18: Addition of trialkyl phosphites to methylphenylglyoxal. Zhur. ob. khim. 35 no.3:544-546 Mr '65. (MIRA 18:4)

1. Kazanskiy institut organicheskoy khimii AN SSSR.

ARBUZOVA, K.M., KUKHTIN, V.A.

New types of Arbuzov rearrangement. Part 19: Addition of trialkyl phosphites to acetylenecarboxylic acids. Zhur. ob. khim. 35 no.7:1146-1149 Jl '65. (MIRA 18:8)

1. Institut organicheskoy khimii AN SSSR, Kazan'.

L 28876-66 EWP(j)/EWT(m) RM

ACC NR: AP6018836 SOURCE CODE: UR/0079/65/035/003/0544/0546

AUTHOR: Kirillova, K. M.; Kukhtin, V. A.

ORG: Kazan' Institute of Organic Chemistry, AN SSSR (Kazanskiy institut organicheskoy khimii AN SSSR)

TITLE: New types of Arbuzov rearrangements. XVIII. Addition of trialkyl phosphites to methylphenylglyoxal

SOURCE: Zhurnal obshchey khimii, v. 35, no. 3, 1965, 544-546

TOPIC TAGS: phosphate, polymerization, organic phosphorus compound

ABSTRACT: The reaction of phosphites with a nonsymmetrical alphadiketone: methylphenylglyoxal was studied. The corresponding 1,3,2-dioxaphospholene is always produced. Formation of the hydroxyketone is observed only in rare cases and in very low yield. The 1,3,2-dioxaphospholene derivatives: 2,2',2"-trialkoxy-4-methyl-5-phenyl-1,3,2-dioxaphospholenes were found to differ somewhat from previously described 1,3,2-dioxaphospholenes in their chemical properties. They react readily with water, and less actively with acetic acid, to form phosphates, and are active initiators of polymerization. Reaction with phenylhydrazine produces the alpha-phenylhydrazone of methylphenylglyoxal rather than a phenylosazone. Attempts at thermal conversion of a dioxaphospholane to a phosphinic ester were unsuccessful; a dioxaphospholane was produced by the action of diacetyl on the dioxaphospholene. Orig. art. has: 1 figure, 7 formulas, and 1 table. [JPRS]

SUB CODE: 07 / SUBM DATE: 03Nov63 / ORIG REF: 003 / OTH REF: 001

Card 1/1 UDC: 547.241+547.442.2

KIRILLOVA, K.N.

Melanoma of the nasal mucosa. Vest. otorinolar., Moskva 15 no.5:73-74 Sept-Oct 1953. (CLML 25:5)

1. Of the Clinic for Diseases of the Ear, Throat, and Nose (Head -- Honored Worker in Science Bashkir ASSR Prof. S.V. Mikhaylovskiy), L'vov Medical Institute.

KIRILLOVA, K.N.

Forms of secondary otitis in small children. Pediatriia 39 no.1:81 Ja-F '56. (MLRA 10:1)
(EAR--DISEASES)

KIRILLOVA, K. N., Cand Med Sci -- (diss) "The Condition of Nasal Accessory Sinuses in Patients Suffering from Scleroma of the Respiratory Passages". L'vov, 1958. 11 pp (L'vov State Med. Inst). 200 copies. (KL 34-58, 101)

TKACHEVA, R.E.; ORORODNEVA, V.I.; DUBOVSKAYA, M.V.; MARKOVA, Ye.I.; GRIGOR'YEV, N.P.; POPOVA, A.I.; ROZIN, M.S.; OPALEV, A.F. Prinimali uchastiye: ANTONOVA, L.N.; MALAYEV, A.A.; KIRILLOVA, L.D.; SOKOLOVSKAYA, Ye.Ya., red.izd-va; BYKHOVER, N.A., red.; GUROVA, O.A., tekhn. red.

[Concise handbook on the mineral resources of capitalist countries; Asia] Kratkii spravochnik po mineral'nym resursam kapitalisticheskikh stran; Aziia. Pod red. N.A.Bykhovera, M.V.Dubovskoi i A.F.Opaleva. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1961. 124 p. (MIRA 15:2)
(Asia—Mines and mineral resources)

TKACHEVA, R.E.; OGORODNEVA, V.I.; DUBOVSKAYA, M.V.; MARKOVA, Ye.I.; GRIGOR'YEV, N.P.; POPOVA, A.I.; ROZIN, M.S.; OPALEV, A.I.; KIRILLOVA, L.D.[translator]; BYKHOVER, N.A., red.; SOKOLOVSKAYA, Ye.Ya., red. izd-va; BYKOVA, V.B., tekhn. red.

[Brief manual on the mineral resources of capitalist countries; Europe]Kratkii spravochnik po mineral'nym resursam kapitalisticheskikh stran; Evropa. Pod red. N.A.Bykhovera, M.V.Dubovskoi i A.F.Opaleva. Moskva, Gosgeoltekhizdat, 1962. 118 p. (MIRA 15:8)

1. Russia (1923- U.S.S.R.)Vsesoyuznyy geologicheskiy fond. (Europe, Western—Mines and mineral resources—Handbooks, manuals, etc.)

TSVETKOV, Ivan Dmitriyevich; NEPENIN, Yu.N., dots., kand. tekhn.nauk, retsenzent; FLYATE, D.M., dots., kand. tekhn. nauk, retsenzent; KIRILLOVA, L.D., red.; URITSKAYA, A.D., tekhn. red.

[Some calculations for the production of sulfite pulp with a sodium base] Nekotorye raschety po proizvodstvu sul'fitnoi tselliulozy na natrievom osnovanii; metodicheskoe posobie k diplomnomu proektirovaniiu dlia studentov khimiko-tekhnologicheskogo fakul'teta. Leningrad, Vses. zaochnyi lesotekhn. in-t, 1962. 112 p. (MIRA 16:8)

(Woodpulp)

BELOV, Sergey Vasil'yevich, doktor sel'khoz. nauk; DMITRIYEV, Ivan Dmitriyevich, dots.; KOLOSOVA, Anna Yevmen'yevna, dots.; BELYAYEV, N.I., retsenzent; KIRILLOVA, L.D., red.; URITSKAYA, A.D., tekhn. red.

[Aerial photographic surveying and aviation in forest management] Aerofotos"emka i aviatsiia v lesnom khoziaistve; uchebnoe posobie dlia studentov lesokhoziaistvennogo fakul'teta. Pod obshchei red. S.V.Belova. Leningrad, Vses. zaochnyi lesotekhn. in-t, 1962. 256 p. (MIRA 16:10)

1. Nachal'nik otdela aerofotoizyskaniy Gosudarstvennogo instituta po proyektirovaniyu lesnogo transporta (for Belyayev).
(Aerial photogrammetry) (Aeronautics in forestry)
(Forest management)

KOBLIKOVA, Aleksandra Georgiyevna, dots., kand. tekhn. nauk;
KASHINA, T.S., dots., kand. tekhn. nauk, retsenzent;
RODIONOV, S.V., dots., kand. tekhn. nauk, otv. red.;
KIRILLOVA, L.D., red.

[Glues in woodwork; lectures from the course "Technology of the manufacture of glued materials and plates" for students of the Faculty of the Mechanical Technology of Wood] Klei v derevoobrabotke; lektsii po kursu "Tekhnologiia proizvodstva kleenykh materialov i plit" dlia studentov fakul'teta mekhanicheskoi tekhnologii drevesiny. Leningrad, Vses. zaochnyi lesotekhn. in-t, 1962. 115 p. (MIRA 17:7)

KIRILLOVA L. F.

89-3-7/30

AUTHORS: Bogachev, N. P. , Van Shu-Fen', Gramenitskiy, I. M. , Kirillova, L. F. , Lebedev, R. M. , Lyubimov, V. B. , Markov, P. K. , Merekov, Yu P. , Podgoretskiy, M. I. , Sidorov, V. M. , Tolstov, K. D. , Shafranova, M. G.

TITLE: The Interaction of 9 Bev Protons With Nuclei in Photo-Emulsion (Vzaimodeystviye protonov s energiyey 9 Bev s yadrami fotoemul'sii)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp. 281 - 284 (USSR)

ABSTRACT: The photoemulsion НИКФИ-Р with a layer of about 450 μ was irradiated with protons within and out of the vacuum chamber of the 9 Bev synchrophasotron. The mean range of 9 Bev protons for an interaction is 34,7 ± 1,5 cm.(The scattering for angles below 5^0 was not taken into account).
258 cases of a nuclear interaction were observed. The mean number of fast particles n_s generated in a process of interaction amounts to 3,4 ± 0,7. The angular distribution of these particles shows a clearly preferred forward motion. The mean number of black and grey traces N_n - the recoil nuclei

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The Interaction of 9 Bev Protons With Nuclei in Photo-Emulsion

not being considered - is 8,3 ± 0,5.
From 249 found stars 18 can be considered to constitute an interaction of the initial protons with "free" or "quasi-free" protons.
13 stars can be considered to represent an interaction between protons and "quasifree" neutrons. All of them have an odd number of traces, and in the point of formation of the star β-traces can be observed. The mean number of fast particles in these 13 star traces is 3,1 ± 0,3. There are 5 figures, 1 table, and 7 references, 1 of which is Slavic.

SUBMITTED: December 16, 1957

AVAILABLE: Library of Congress

1. Photoemulsions-Proton irradiation 2. Vacuum chambers-Applications
3. Particles-Distribution

Card 2/2

KIRILLOVA, L. F.

21 (8)
SOV/89-7-4-12/28

AUTHORS: Barashenkov, V. S., Belyakov, V. A., Van Shu-fen', Glagolev, V. V., Dalkhazhav, N., Kirillova, L. F., Lebedev, R. M., Mal'tsev, V. M., Markov, P. K., Tolstov, K. D., Tsyganov, E. N., Shafranova, M. G., Yao Ch'ing-hsieh

TITLE: The Interaction of Fast Nucleons With Nuclei of the Photoemulsion NIKFI-R

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 4, pp 376-377 (USSR)

ABSTRACT: The present paper deals with the interaction between 9 Bev-protons, which were accelerated in the beam of the synchrophasotron of the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research), and the nuclei of a photoemulsion of the NIKFI-R type. The results of these measurements are shown by a table. On the basis of the data thus found it is possible to draw several conclusions as to the mechanism of the interaction between a fast proton and a nucleus. If the primary nucleon-nucleus collision is an interaction between nucleon and channel, the velocity of the center of mass in an interaction of silver and bromine with the channel will be considerably less than in an interaction with light nuclei. Therefore, also the number of s-particles

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must be considerably greater. In the experiment, the numbers of s-particles for light and heavy nuclei are, however, nearly the same. This is explainable on the basis of the cascade mechanism of interaction, in which the energy of the s-particles decreases rapidly in cascade collisions. The multiplicity of the particles produced decreases simultaneously. In the case of the greater number of g-particles, nucleons are concerned, which may be explained by the cascade mechanism of nucleon - nucleus interaction. Also the agreement between the transversal momentum p_{g+p} for g-protons originating from interactions with light and heavy nuclei points in the direction of the interaction cascade mechanism. Besides, a search was made for strange particles by employing the method of investigating according to areas. The cross section of the production of K^+-particles with an energy of $E < 140$ Mev in a medium-weight nucleus of the photoemulsion amounts to $(5 \pm 2)10^{-27}$ cm^2. Besides, the amount of the production cross section, the wide angular distribution of the K-mesons, as well as other facts indicate that a noticeable fraction of

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slow strange particles is produced in an intranuclear cascade process. Furthermore, the medium-weight energy losses of a fast nucleon are evaluated in the case of a single nucleon-nucleon collision. A 9Bev-proton gives up an average of (5.1 ± 0.8) Bev to a medium-weight nucleus of the photoemulsion, which amounts to (60 ± 10) % of its initial energy. 4.05 Bev are used for the production of pions, and 1.05 Bev are transferred to the nucleons of the nucleus. As a proton in an medium-weight nucleus undergoes approximately 2 collisions, the proton, in one single nucleon-nucleon collision, loses $\Delta E = 35 \pm 10$ % of its initial energy. By means of other measurements of the pion energy spectrum carried out independently of the present paper in a nucleon-nucleus collision $\Delta E = 40 \pm 10$ % is obtained. The statistical theory of multiple production furnishes $\Delta E = (40 - 50)$ %. The authors thank G. Bezzogikh, V. Vaksim, E. Kuznetsova and N. Netkina for their help in the measurements, and L. Popova for his assistance in analyzing measuring results. There are 1 table and 1 reference.

Card 3/3

AZIMOV, S.A.; DO IN SEB; KIRILLOVA, L.F.; KHABIBULLINA, E.M.; TSYGANOV, E.N.; SHAFRANOVA, M.G.; SHAKHBAZYAN, B.A.; YULDASHEV, A.A.

[Elastic p-p scattering at an energy of 2.8 Bev] Uprugoe rasseianie protona na protone pri energii 2,8 Bev. Dubna, Ob"edinennyi institut iadernykh issledovanii, 1961. 11 p. (MIRA 14:11)

1. Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR (for Azimov, Khabibullina).

(Protons--Scattering)

DO IN SEB; KIRILLOVA, L.F.; MARKOV, P.K.; POPOVA, L.G.; SILIN, I.N.; TSYGANOV, E.N.; SHAFRANOVA, M.G.; SHAKHBAZYAN, B.A.; YULDASHEV, A.A.

[Proton-proton scattering at an energy of 8.5 Bev] Rasseyaniye protona na protone pri energii 8,5 Bev. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1961. 17 p. (MIRA 14:12)

1. Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR (for Yuldashev).
(Protons—Scattering)

S/056/61/041/006/010/054
B108/B138

AUTHORS: To Ying Hsieh, Kirillova, L. F., Markov, P. K., Popova, L. G., Silin, I. N., Tsyganov, E. N., Shafranova, M. G., Shakhbazyan, B. A., Yuldashev, A. A.

TITLE: 8.5-Bev proton-proton scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1748-1756

TEXT: Continuing previous work (V. B. Lyubimov et al. ZhETF, 37, 910, 1959; P. K. Markov et al. ZhETF, 38, 1471, 1960) the authors studied elastic proton-proton scattering at energies of 8.5 Bev, using photographic emulsions of the НИКФИ-БР (NIKFI-BR) type. The primary proton beam of $(2.01 \pm 0.05)\cdot 10^5$ particles/cm^2 (from the proton synchrotron of the Joint Institute of Nuclear Research) struck the emulsion perpendicularly. The emulsion contained $(2.90 \pm 0.06)\cdot 10^{22}$ hydrogen atoms per cm^3. 354 elastic scattering events (plus 145 of previous work) were found. The elastic scattering cross section was 8.74 ± 0.40 millibarns. Conclusions: (1) The mean square p-p interaction radius is

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8.5-Bev proton-proton scattering

$(1.15 \pm 0.05) \cdot 10^{-13}$ cm. (2) The departure of experimental from calculated results is three times the overall error. This is due to neglect of the dependence of scattering amplitude on proton spin states, and to neglect of its real part, both of which were confirmed by experiment. However, the real part does not exceed half of the imaginary part. The authors thank V. I. Veksler for his interest, and K. D. Tolstov for collaboration.
There are 4 figures, 2 tables, and 11 references: 6 Soviet and 5 non-Soviet. The three most recent references to English-language publications read as follows: G. Von Dardel et al. Phys. Rev. Lett., 5, 333, 1960; A. Ashmore et al. Phys. Rev. Lett., 5, 576, 1960; Y. K. Lim et al. Suppl. Nuovo Cim., 15. 382, 1960.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR (Physicotechnical Institute AS Uzbekskaya SSR) (A. A. Yuldashev)

SUBMITTED: June 21, 1961

Card 2/2

S/056/62/042/002/020/055
B108/B104

AUTHORS: Azimov, S. A., To Ying Hsiehb, Kirilleva, L. F., Khabibullina, E. M., Tsyganov, E. N., Shafranova, M. G., Shakhbazyan, B. A., Yuldashev, A. A.

TITLE: Elastic proton-proton scattering at 2.8 Bev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 430 - 434

TEXT: Elastic scattering of 2.8-Bev protons from the OIYal (see Association entry) proton synchrotron from protons was studied with the aid of 400μ thick НИКФИ-БР(NIKFI-BR) photoemulsions. 492 elastic scattering events were recorded. The differential cross section for elastic scattering in the range between 2.5 and 20.5° was 10 - 10.2 mb. The experimental data do not agree with the assumption on small spin interaction and small real part of the phase shifts. It was assumed that the singlet and the triplet nuclear force potentials are different: $V_s = -(u + iw)e^{-\beta^2 r^2}$, $V_t = \kappa V_s$. The calculations made with both the M matrix and the optical model considering

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Elastic proton-proton scattering...

Coulomb interaction showed that different total cross sections have to be allowed for in the singlet and triplet states. The mean square proton-proton interaction radius is 1.06 ± 0.10 f. With $K<1$, the following results for the potential were found to satisfy the experimental data: $K = 0.18 \pm 0.04$, $u = 4.1 \pm 42.8$ Mev, $w = 333.4 \pm 112.8$ Mev. The authors thank V. I. Veksler for discussions and I. N. Silin for his work at the M-20(M-20) electronic computer. There are 2 figures, 1 table, and 6 references: 3 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: M. J. Longo et al. Phys. Rev. Lett., 3, 568, 1959; W. M. Preston et al. Phys. Rev., 118. 579, 1960; G. Smith et al. Proc. 1960 Ann. Intern. conf. of high energy physics at Rochester, Publ. Univ. Rochester, 1961, p. 203; B. Cork et al. Phys. Rev., 107, 856, 1957.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Fiziko-tekhnicheskiy institut Akademii nauk Uzbekskoy SSR (Physicotechnical Institute of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: September 26, 1961

Card 2/2

DO IN SEB; KIRILLOVA, L.F.; MARKOV, P.K.; POPOVA, L.G.; SILIN, I.N.; TSYGANOV, E.N.; SHAFRANOVA, M.G.; SHAKHBAZYAN, B.A.; YULDASHEV, A.A.

Proton-proton scattering at an energy of 8.5 Bev. Zhur. eksp. i teor. fiz. 41 no.6:1748-1756 D '61. (MIRA 15:1)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Sotrudnik Fiziko-tekhnicheskogo instituta AN Uzbekskoy SSR (for Yuldashev).
(Protons--Scattering)

(6)

KIRILLOVA, L.F., NIKITIN, V.A., NOMOFILOV, A.A., SVIRIDOV, V.A., STRUNOV, L.N., TSIGANOV, Ye. N., and SHAFRANOVA, M.G.

"Elastic Proton-Proton Scattering at 6 and 10 Gev"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

Joint Inst. for Nuclear Research
Laboratory of High Energies, Dubna, 1962

AZIMOV, S.A.; DO IN SEB; KIRILLOVA, L.F.; KHABIBULLINA, E.M.; TSYGANOV, E.N.; SHAFRANOVA, M.G.; SHAKHBAZYAN, B.A.; YULDASHEV, A.A.

Elastic proton-proton scattering at 2.8 Bev.[with summary in English]. Zhur. eksp. i teor. fiz. 42 no.2:431-434 F '62.
(MIRA 15:2)

1. Ob"yedinennyy institut yadernykh issledovaniy i Fiziko-tekhnicheskiy institut AN Uzbekskoy SSR.
(Protons--Scattering)

L 10234-63 EDS/EWT(m)—AFFTC/ASD—IJP(C)
ACCESSION NR: AP3000039 S/0056/63/044/005/1487/1492

AUTHOR: Do In Seb; Kirillova, L. F.; Shafranova, M. G.

TITLE: Elastic scattering of 8.35 BeV protons on protons.

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1487-1492

TOPIC TAGS: proton-proton elastic scattering, large angles, high energy, water-emulsion techniques, scanning efficiency

ABSTRACT: Using a water-loaded emulsion chamber and a scanning method that permits the accumulation of reliable data at large scattering angles, more exact differential cross sections are obtained for elastic pp scattering at 8.35 BeV. This work is a continuation of earlier experiments aimed at increasing the statistical accuracy in the region of small scattering angles (less than 8.5° in the center of mass) and at obtaining more reliable data at large angles (more than 8.5° in the c.m.s.). It is found that the cross section is larger in the large-angle region than had been previously thought. The data are analyzed on the basis of the Regge-pole ideas and are compared with

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L 10234-63
ACCESSION NR: AP3000039

other experiments. The total cross section for elastic pp scattering is found to be 10.8 plus or minus 0.8 millibarns, and the rms interaction radius is 1.07 plus or minus 0.08 Fermi. It is pointed out that in view of the observed systematic undervaluation of the differential cross section in the region of large scattering angles, connected with the overvaluation of the scanning efficiency, the experimental data obtained with emulsions should be approached with caution. Orig. art. has: 4 formulas, 2 figures, and 1 table.

ASSOCIATION: Ob"yedenennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 11Dec62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NR REF SOV: 007 OTHER: 011

Card 2/2

KIRILLOVA, L.F.; NIKITIN, V.A.; NOMOFILOV, A.A.; SVIRIDOV, V.A.; STRUNOV, L.N.; SHAFRANOVA, M.G.

Elastic scattering of protons at small angles at energies of 6 and 10 Gev. Zhur. eksp. i teor. fiz. 45 no.4:1261-1266 O '63. (MIRA 16:11)

1. Ob"yedinennyy institut yadernykh issledovaniy.

KIRILLOVA, L.F.; NIKITIN, V.A.; PANTUYEV, V.S.; SVIRIDOV, V.A.; STRUNOV, L.N.; KHACHATURYAN, M.N.; KHRISTOV, L.G.; SHAFRANOVA, M.G.; KORBEL, Z.; ROB,L.; DAMYANOV, S.; ZLATEVA, A.; ZLATANOV, Z.; YORDANOV, V. [Iordanov,V.]; KANAZIRSKI, Kh.; MARKOV, P.; TODOROV, T.; CHERNEV, Kh.; DALKHAZHAV, N.; TUVDENDORZH, D.

Elastic pp and pd-scattering at small angles in the energy range 2 - 10 Bev. IAd. fiz. 1 no.3:533-539 Mr '65. (MIRA 18:5)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Vysshaye tekhnicheskoye uchilishche, Praga (for Korbel, Rob). 3. Fizicheskiy institut Bolgarskoy Akademii nauk, Sofiya (for Damyanov, Zlateva, Zlatanov, Yordanov, Kanazirski, Markov, Todorov, Chernev). 4. Institut khimii i fiziki, Ulan-Bator, Mongol'skaya Narodnaya Respublika (for Dalkhazhav, Tuvdendorzh).

L 22122-66 EWT(1)

ACC NR: AP6004922 SOURCE CODE: UR/0056/66/050/001/0076/0077

AUTHOR: Kirillova, L. F.; Nikitin, V. A.; Sviridov, V. A.; Strunov, L. N.; Shafranova, M. G.; Korbel, Z.; Rob, L.; Zlateva, A.; Markov, P. K.; Todorov, T.; Khristov, L.; Chernev, Kh.; Dalkhazhav, N.; Tuvdendorzh, D.

ORG: [Kirillova; Nikitin; Sviridov; Strunov; Shafranova] Joint Institute of Nuclear Research, Dubna (Ob"yedinennyy institut yadernykh issledovaniy); [Korbel; Rob] Czechoslovakian Higher Technical School, Prague (Chekhoslovatskoye Vysshaye tekhnicheskoye uchilishche); [Zlateva; Markov; Todorov; Khristov; Chernev] Physics Institute, Bulgarian Academy of Sciences, Sofia (Fizicheskiy institut Bolgarskoy Akademii nauk); [Dalkhazhav; Tuvdendorzh] Institute of Chemistry and Physics, Mongolian Academy of Sciences, Ulan-Bator (Institut khimii i fiziki Mongol'skoy Akademii nauk)

TITLE: Real part of the pp elastic scattering amplitude at 2, 4, 6, 8, and 10 Gev

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 1, 1966, 76-77

TOPIC TAGS: proton scattering, elastic scattering, scattering amplitude, differential cross section, nuclear scattering

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L 22122-66

ACC NR: AP6004922 O

ABSTRACT: This is a continuation of earlier work by the authors (Phys. Lett. v. 13, 93, 1964) in which they present results of the measurements of the real part of the nuclear elastic scattering amplitude for an energy of 4 Gev, and more precise data for energies 2, 6, 8, and 10 Gev, taking into account the relativistic corrections. The experimental technique was described elsewhere (PTE no. 6, 18, 1963). The differential cross section was measured in the interval $0.003 < |t| < 0.2$ $(Gev/c)^2$ (t = momentum transfer squared). The analysis of the obtained data as well as those reported by others was based on the Bethe formula (Ann. of Phys. v. 3, 190, 1958) with allowance for radiative corrections. The results agree well with the theoretical curve proposed by Soding (Phys. Lett. v. 8, 286, 1963), up to an energy of 20 Gev, above which some discrepancy appears. Orig. art. has: 1 figure and 2 formulas.

SUB CODE: 20/ SUBM DATE: 25Aug65/ ORIG REF: 001/ OTH REF: 008

Card 2/2 BK

L 24301-66 EWT(m) DIAAP

ACC NR: AP6006795 SOURCE CODE: UR/0386/66/003/001/0015/0021

AUTHOR: Zolin, L. S.; Kirillova, L. F.; Liu, Ch'ing-ch'iang; Nikitin, V. A.; Pantuyev, V. S.; Sviridov, V. A.; Strunov, L. N.; Khachaturyan, M. N.; Shafranova, M. G.; Korbel, Z.; Rob, L.; Devinski, P.; Zlatanov, Z.; Markov, P.; Khristov, L.; Chernev, Kh.; Dalkhazhav, N.; Tuvdendorzh, D.

ORG: [Zolin, Kirillova, Liu, Nikitin, Pantuyev, Sviridov, Strunov, Khachaturyan, Shafranova] Joint Institute of Nuclear Research, Dubna (Ob"yedinennyy institut yadernykh issledovaniy); [Korbel, Rob] Czechoslovakian Higher Technical School, Prague (Cheshskoye vyssheye tekhnicheskoye uchilishche); [Devinski, Zlatanov, Markov, Khristov, Chernev] Physics Institute, Bulgarian Academy of Sciences, Sofia (Fizicheskiy institut Bolgarskoy akademii nauk); [Dalkhazhav, Tuvdendorzh] Institute of Physics and Chemistry, Mongolian Academy of Sciences, Ulan Bator (Institut fiziki i khimii Mongol'skoy akademii nauk)

TITLE: Real part of the pn scattering amplitude in the energy interval 2--10 Gev

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 1, 1966, 15-21

TOPIC TAGS: proton scattering, neutron scattering, scattering amplitude, differential cross section, deuteron reaction

ABSTRACT: On the basis of experimental data obtained by the authors on elastic pd scattering in the energy interval 1--10 Gev, and information on pp scattering amplitude in this energy range, the authors determined the real part of the scattering

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L 24301-66

ACC NR: AP6006795

amplitude by means of an experiment involving registration of slow recoil deuterons from a film target of deuterated polyethylene 0.5--0.6 μ thick. The investigated range of the squared momentum transfer was $0.003 < |t| < 0.2$ (Gev/c)^2. Plots are presented of the differential cross sections vs. the square of the momentum transfer and an empirical formula is given for these plots. The value obtained for the total cross section of elastic pd scattering at 6 Gev is several times smaller than that measured by others. In the small-angle region of pd scattering, constructive interferences were observed between the Coulomb and nuclear scatterings. From the obtained real part of the pd scattering amplitude, and from a comparison of the obtained data with earlier measurements by the authors of the pp scattering amplitude of the same energies (ZhETF v. 50, 76, 1966), the estimated real part of the pn scattering amplitude is +0.2, -0.06, -0.45, and -0.40 for 2, 6, 8, and 10 Gev respectively. The small nonzero real part of the pn scattering amplitude agrees with data obtained at CERN (G. Bellettini et al., Internat. Conf on Elementary Particles, Oxford, 1965). Orig. art. has: 2 figures, 3 formulas, and 2 tables.

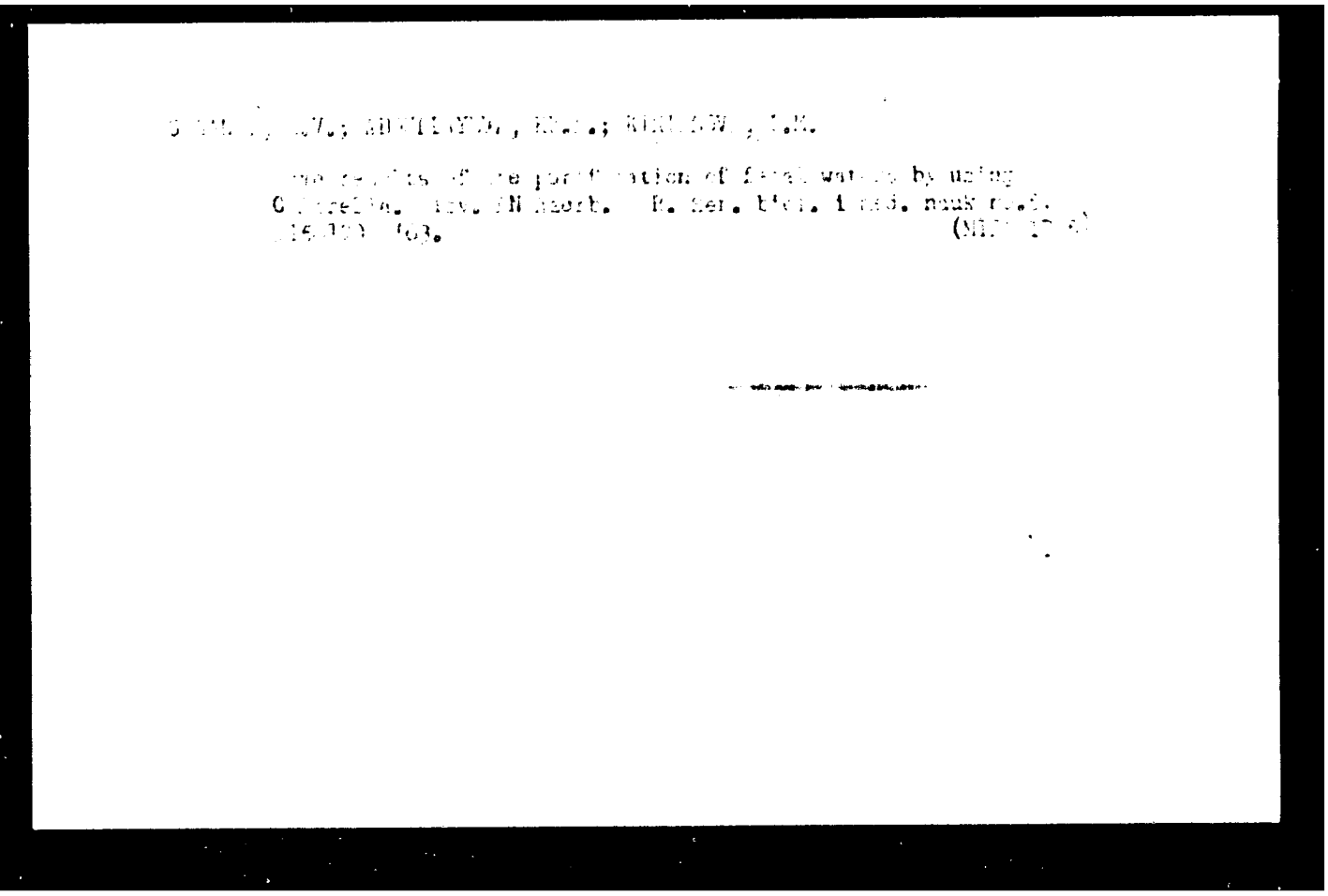
SUB CODE: 20/ SUBM DATE: 12Nov65/ ORIG REF: 005/ OTH REF: 005

Card 2/2

PROSTAKOV, N.S.; GAYVORONSKAYA, L.A.; MIKHAYLOVA, N.M.; KIRILLOVA, L.M.

Substituted pyridines. Synthesis of 2,5-dimethyl-4-alkaryl (aryl) pyridines. Zhur. ob. khim. 33 no.8:2573-2576 Ag '63. (MIRA 16:11)

1. Universitet druzhby narodov imeni Patrisa Lumumby.



PROSTAKOV, N.S.; SHAKHPARONOVA, L.A.; KIRILLOVA, L.M.

Substituted pyridines. 2,5-Dimethyl-4-benzoylpyridine and 2,5-dimethylpyridyl-2-aniline. Zhur. ob. khim. 34 no.10: 3231-3234 O '64. (MIRA 17:11)

1. Universitet druzhby narodov imeni Patrisa Lumumby.

KHAMTSOV, A.I., arkhitektor; GONCHAROVA, A.A., nauchnyy sotrudnik; ANDREYEV, A.M.; GORDEYEV, N.V., nauchnyy sotrudnik; PISARSKAYA, L.V., nauchnyy sotrudnik; DONOVA, K.V., nauchnyy sotrudnik; SMIRNOVA, Ye.I., nauchnyy sotrudnik; KIRILLOVA, L.P., nauchnyy sotrudnik; KREKSHINA, L., red.; YEGOROVA, I., tekhn.red.

[Through the Kremlin; concise guidebook] Po Kremliu; kratkii putevoditel'. Izd.2., dop. Moskva, Mosk.rabochii, 1960. 303 p. (MIRA 13:4)

1. Gosudarstvennaya Oruzheynaya palata (for Gordeyev, Pisarskaya, Donova, Smirnova, Goncharova, Kirillova).
(Moscow--Kremlin--Guidebooks)

S/080/60/033/04/22/045

AUTHORS: Razumovskiy, S.D., Bartnitskiy, I.N., Lyutyy, V.P., Kirillova, L.P.

TITLE: The Hydrolysis of Ethylsulfates

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 4, pp 877 - 884

TEXT: The production of synthetic ethyl alcohol by the method of sulfuric acid absorption of ethylene passes through a stage of ethylsulfate formation. This is then subjected to hydrolysis. The hydrolysis rate is investigated here in relation to the temperature and dilution and with regard to studying the effect of these factors on the yields of alcohol and ether. It has been shown that the hydrolysis rate increases with the temperature. An extract obtained by the Orskiy zavod sinteticheskogo spirta (Orsk Plant of Synthetic Alcohol) with a specific gravity of 1.33 - 1.35 and a content of sulfuric acid of 70% and a saturation of 1.1 mole of ethylene per 1 mole of H_2SO_4 was hydrolyzed. Under industrial conditions it is expedient to carry out hydrolysis at a temperature of 100°C. Diethylsulfate is hydrolyzed considerably more quickly than monoethylsulfate; the hydrolysis rate of the extract in the whole is limited by the rate of monoethyl disappearance. Within the range of 70 - 100°C the yields of alcohol and ether do not change noticeably with the temperature; beyond 110°C the thermal decomposition of

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The Hydrolysis of Ethylsulfates S/080/60/033/04/22/045

ethylsulfates starts with the liberation of C_2H_4 and SO_2 and the alcohol yield decreases. The maximum yeild of alcohol is obtained in case of the ratio extract : water = 1:1.33 based on weight. In the case of the change of this ratio the yields of alcohol decrease. The hydrolysis of the extract by water steam even after preliminary partial dolution with water produces no positive results: the yield is low. Ether is formed in the hydrolysis of the extract at the expense of diethylsulfate. The optimum conditions for hydrolysis of the extract in the industry are: a temperature of 100°C and a dilution with water in the ratio 1:1.1 based on weight.
There are: 3 graphs, 3 tables and 7 references, 4 of which are Soviet, 2 American and 1 German.

SUBMITTED: April 18, 1959

Card 2/2

5.2620

69050

AUTHORS: Toropova, V. F., Kirillova, L. S. S/078/60/005/03/012/048 B004/B002

TITLE: An Investigation of Complex Compounds of Mercury and Silver With Thiosemicarbazide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 3, pp 575-579 (USSR)

ABSTRACT: It was the purpose of the authors' investigation to determine the stability and thermodynamic data of thiosemicarbazide complexes of Hg and Ag. The investigation was carried out potentiometrically by means of a PPTV-1-potentiometer at different temperatures. Table 1 gives the potentials of the Hg electrode in solutions of thiosemicarbazide complexes of Hg. As is shown by figure 1, there is a linear relation between the potential of the electrode and the logarithm of the concentration, with tg α = 0.120. Under the experimental conditions chosen, the complex ions are of the composition $\left[Hg(TS)_4\right]^{2+}$ (TS = $SC^{NHNH_2}_{NH_2}$). Table 2 gives the instability constants pK_4 of the complexes for 20°- 50°. At 25°, $pK_4 = 26.25 \pm 0.07$ holds. The heat effect ΔH of the complex development was found to be -41 ± 2 kcal. Tables 2, 3 and figure 2 give the results for the thiosemicarbazide complex of Ag. The complex ions are of the

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69050

An Investigation of Complex Compounds of Mercury and Silver With Thiosemicarbazide

S/078/60/005/03/012/048
B004/B002

composition $[Ag(TS)_3]^{3+}$, the instability constant pK_3 at 25° is 12.76±0.08, the heat of formation ΔH = 18±2 kcal. Tables 5, 6 give the results as to the thiourea complex of Ag which is of the composition $[AgT_3]^+$ ($T = SC(NH_2)_2$). The instability constant pK_3 at 25° is 13.10±0.05 which is in good agreement with A. T. Pilipenko's data (Ref 10). The authors' results are given by table 7. It is said that thiosemicarbazide compounds of Hg and Ag hardly differ from the thiourea compounds in their thermodynamic values. Since in the latter, the bond between Hg and Ag respectively, and the addendum is formed by the sulphur atom only, the authors assume a similar structure in the case of thiosemicarbazide complexes as well. The nitrogen of hydrazine thus does not take part in the complex formation. There are 7 figures, 2 tables, and 15 references, 7 of which are Soviet.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina (Kazan' State University imeni V. I. Ul'yanov-Lenin)

SUBMITTED: November 5, 1958

Card 2/2

KHANT, Dzh.A.[Hunt, G.A.]; KIRILLOVA, L.S.[translator]; SHUR, M.G. [translator]; DYNKIN, Ye.B., red.; BRYANDINSKAYA, A.A., red.; RYBKINA, V.P., tekhn. red.

[Markoff [sic] processes and ptentials]Markovskie protsessy i potentsialy. Moskva, Izd-vo inostr. lit-ry, 1962. 276 p. Translated from the English. (MIRA 16:1)
(Markov processes) (Potential, Theory of)

KIRILLOVA, L.S. (Moskva)

Optimatization of the finite state of a system. Avtom. i telem. 24 no.8:1050-1055 Ag '63. (MIRA 16:8)

(Automatic control)

KIRILLOVA, L.S. (Moskva)

Existence theorem for a terminal control problem. Avtom. i telem. 24 no.9:1178-1182 S '63. (MIRA 16:9)
(Existence theorems) (Automatic control)

KIRILLOVA, L.S. (Moskva)

Problem concerning the optimization of the final state of a control system. Avtom.i telem. 23 no.12:1584-1594 D '62. (MIRA 15:12)

(Automatic control)

L 14256-63 EWT(d)/FCC(w)/BDS AFFTC VM/WW/RM(C)

ACCESSION NR: AP3004815 S/0103/63/024/008/1050/1055

AUTHOR: Kirillova, L. S. (Moscow) 53 51

TITLE: Optimization of the terminal state of a plant

SOURCE: Avtomatika i telemekhanika, v. 24, no. 8, 1963, 1050-1055

TOPIC TAGS: terminal-state optimization, optimal trajectory, time optimal control, switching point

ABSTRACT: The problem of terminal control is considered for an object whose motion is described by the system of linear differential equations

$$\frac{dx}{dt} = Ax + b\xi, \qquad (1)$$

where A is a constant matrix with real distinct eigenvalues, b is a constant vector, x is a vector of the phase coordinates of an object, and $\xi(t)$ is the control function satisfying the condition

$$f_1(t) \leq \xi(t) \leq f_2(t). \qquad (2)$$

Card 1/3

L 14256-63

ACCESSION NR: AP3004815

From all permissible controls $\xi(t)$, an optimal control $\xi_0(t)$ is sought which takes the object from the initial position in time T into a position whose distance from the origin of coordinates is minimum, i.e., a control such that the square of the radius vector of a phase point at the instant T is minimum. The performance functional is reduced to the integral form

$$I = \int_0^T \left(-\sum_1^n \rho_i x_i + \xi \sum_1^n x_i\right) dt, \qquad (3)$$

where ρ_i are the eigenvalues of the matrix A. Pontryagin's maximum principle is applied to the solution of the problem. The form of the optimal control function is determined, and it is shown that the number of its switching points does not exceed n - 1. A case in which the motion of an object is described by the system of two linear differential equations is studied in detail, and the structure of optimal trajectories is analyzed. Domains are established in which trajectories at instant T either have or do not have switching points. The domain C is so constructed, that by moving from its points along the time optimum trajectories the origin of coordinates can be reached exactly at time $T_0 < T$.

Card 2/3

L 11256-63

ACCESSION NR: AP3004815

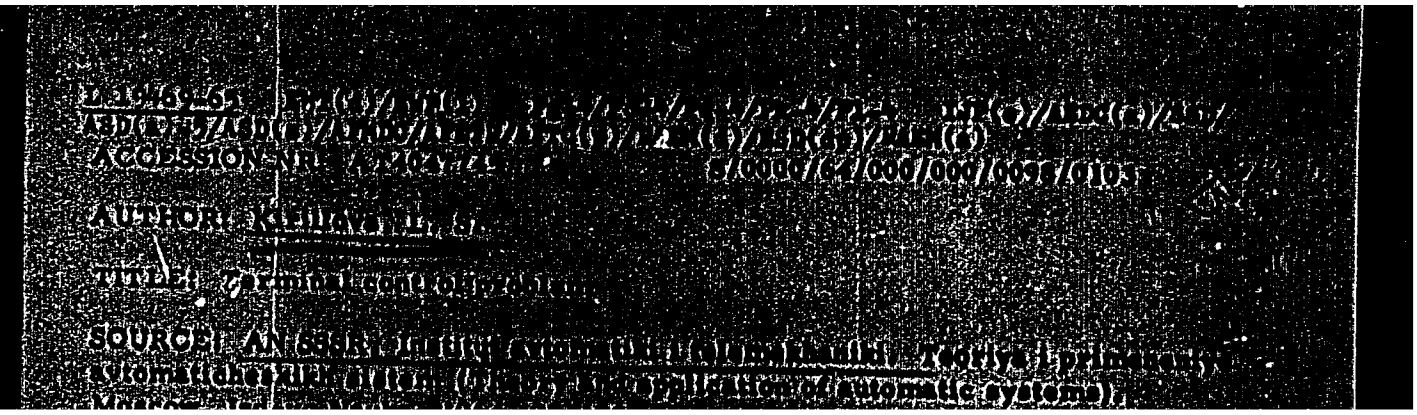
The way in which functions $f_1(t)$ and $f_2(t)$ affect the form of C is analyzed in detail for the case when $f_2(t) - f_1(t) = \text{const}$. A method for numerical solution of the problem is outlined. "In conclusion the author thanks A. M. Letov for his valuable comments and attention displayed toward the work." Orig. art. has: 9 formulas.

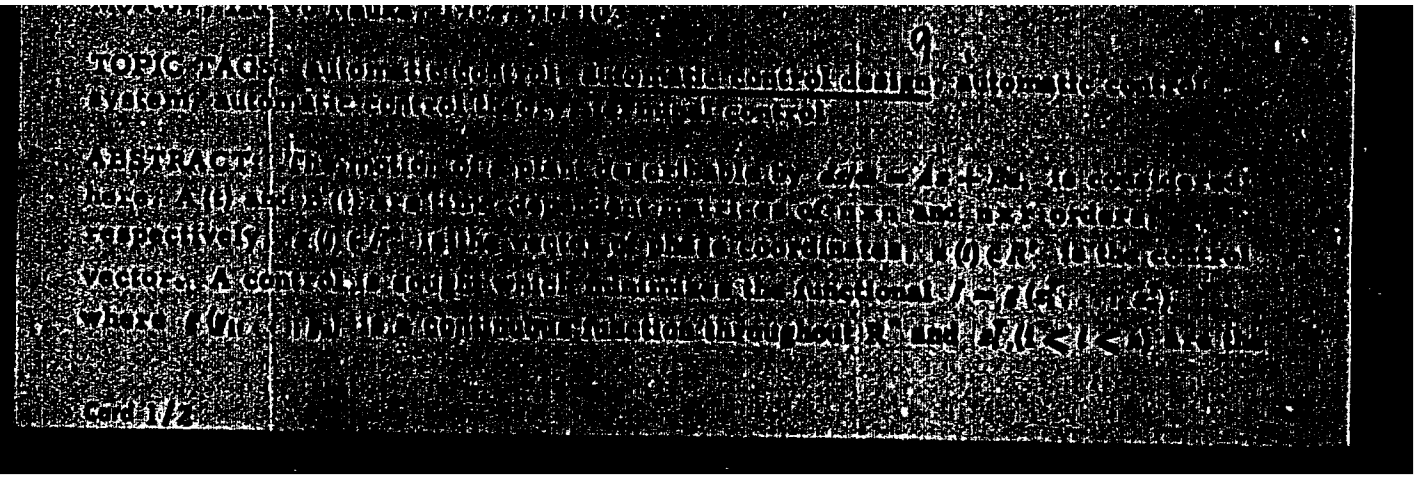
ASSOCIATION: none

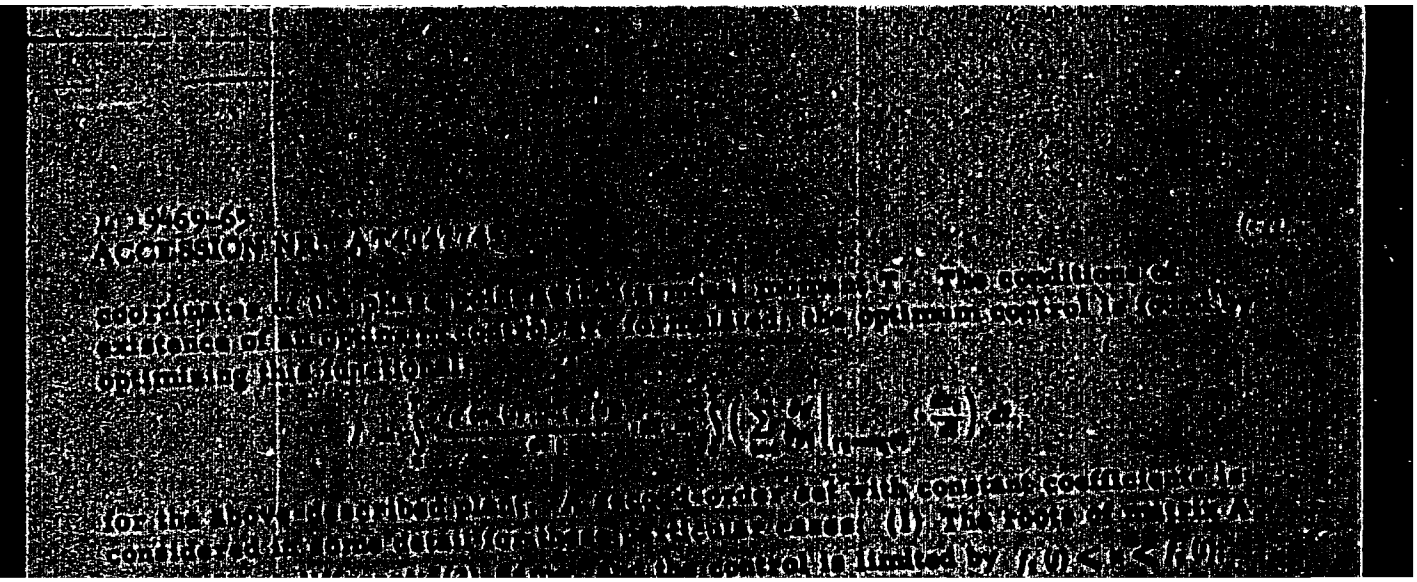
SUBMITTED: 26Jan63 DATE ACQ: 26Aug63 ENCL: 00

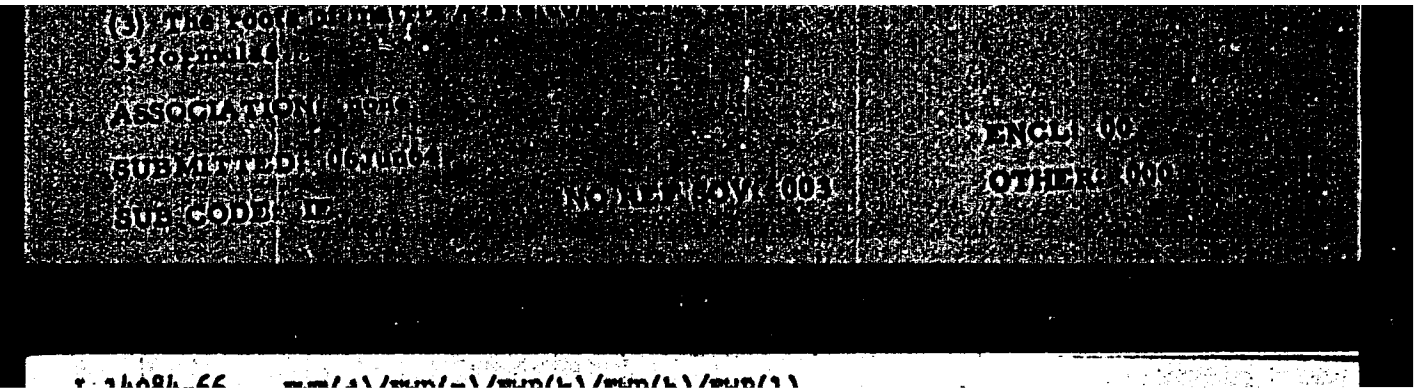
SUB CODE: IE NO REF SOV: 003 OTHER: 000

Card 3/3









L 14904-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6002396 SOURCE CODE: UR/0103/65/026/012/2120/2130

AUTHOR: Kirillova, L. S. (Moscow)

ORG: None

TITLE: The general problem of terminal control in linear systems

SOURCE: Avtomatika i telemekhanika, v. 26, no. 12, 1965, 2120-2130

TOPIC TAGS: linear system, set theory, optimal control continuous function

ABSTRACT: The author considers the problem of terminal control for the functional $g(x_T)$, where $g(x)$ is the arbitrary continuous function of coordinates. The concept of an attainable set is introduced to solve the problem; its properties and structures are studied. Parametrization is incorporated in the attainable set, which makes it possible to reduce the problem of terminal control to the minimization of the n-variable function. The results obtained make it possible to find the region C of initial values, from which it is possible to reach the origin of the coordinates. On this basis, the author proposes a method of finding the time of actuation. The author also examines the minimization of the sum of moduli of the coordinates of the terminal point and presents a complete solution to this problem for a second-order system. Author expresses his gratitude to A. M. Letov for useful advice and attention to this work. Orig. art. has: 4 figures, 14 formulas, and 1 table.

SUB CODE: 09, 12 / SUBM DATE: 14May64 / ORIG REF: 004

Card 1/1

ISAYEVA, L.A.; SINYUSHINA, M.N.; GORBUNOVA, K.P.; AKROVA, I.L.; KIRILLOVA, L.Ye.

Role of staphylococci in the etiology of pneumonias in infants. Pediatriia 39 no.11:83-87 N '60. (MIRA 13:12)

1. Iz kliniki detskikh bolezney i kafedry mikrobiologii I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(PNEUMONIA in inf. & child)
(STAPHYLOCOCCAL INFECTIONS in inf. & child)

KIRILLOVA, M.G.

USSR/Miscellaneous - Porcelain manufacture

Card 1/1 Pub. 104 - 8/11

Authors : Tumanov, S. G., Prof. Dr. Tech. Sc., and Kirillova, M. G.

Title : Individual porcelain mass processing methods and their effect on the properties of porcelain

Periodical : Stek. i ker. 2, 23 - 26, Feb 1955

Abstract : Comparative tests were conducted to determine the effect of individual porcelain mass processing methods on the final qualitative indices of porcelain with special consideration of the steaming method. Results indicate that such porcelain mass processing methods as: 90-day aging, preliminary heating in liquid state to 80-90° for a period of 24 hrs., or passing through a vacuum mill do increase the mechanical stability of the mass both in air-dry and in calcined states. Tables.

Institution: .....

Submitted: .....

BOLOTIN, G.A.; VOLOSHINSKIY, A.N.; KIRILLOVA, M.M.; NOSKOV, M.M.; SOKOLOV, A.V.; CHARIKOV, B.A.

Optical properties of titanium and vanadium in the infrared region of the spectrum. Fiz. met. i metalloved. 13 no.6:823-831 Je '62. (MIRA 15:7)

1. Institut fiziki metallov AN SSSR.
(Titanium--Optical properties) (Vanadium--Optical properties) (Spectrum, Infrared)

SOV/120-59-4-42/50

AUTHORS: Skornyakov, G. P., Kirillova, M. M.

TITLE: Measurement of the Reflection Coefficient of Metals by Means of an SF-4 Spectrophotometer

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, p 150 (USSR)

ABSTRACT: The optical system of an SF-4 spectrophotometer can be used unaltered for measurement of the reflection coefficient of opaque objects. For this purpose the samples are in the form of mirrors, arranged as shown in Fig 1. The samples (mirrors) 2 and 3 may be identical or different. For identical samples the value of the reflection coefficient R is a mean for both mirrors. In the general case it is given by:

$$R = \sqrt{I_2/I_1} \quad ,$$

where I_1 is the spectrophotometer reading for the primary beam, I_2 is the reading for a beam reflected at the mirrors 2 and 3. Since the optical path is increased in the system shown in Fig 1 (where 1 is the spectrophotometer exit slit), it is necessary to limit the light-beam cross-section with a diaphragm, 5, so that the whole of

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Measurement of the Reflection Coefficient of Metals by Means of an SF-4 Spectrophotometer

the light beam enters the window of a photo-element 4 . To ensure that the samples are always placed in the same positions, it is necessary to use a device which fixes their positions with respect to one another and with respect to the light-beam. The results obtained by this method agree well with the published data. Scatter of repeated measurements did not exceed 1%. The advantage of reflection measurements using two mirrors lies in the use of small angles of incidence, i.e. they may be regarded as the reflectivity of the metal. Note: This is a complete translation. There is 1 figure.

ASSOCIATION: Institut fiziki metallov Ural'skogo filiala AN SSSR (Institute for Metal Physics, Ural Branch of the Academy of Sciences, USSR)

SUBMITTED: May 12, 1958.

SOV/51-6-2-24/39

AUTHORS: Skornyakov, G.P. and Kirilleva, M.M.

TITLE: Application of Kravets's Method in Determination of the Optical Constants of Metals (Primeneniye metoda Kravtsa dlya opredeleniya opticheskikh kharakteristik metallov)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 2, pp 248-249 (USSR)

ABSTRACT: Kravets et al. (Refs 1-3) described a method of measuring optical constants by using normal incidence in mirror reflection of the studied substance deposited in the form of a wedge on transparent bases with different refractive indices. The present paper describes an application of Kravets's method to determination of the optical constants of metals. A polished metal sample was immersed in a bath filled with a liquid. The sample was placed in such a way that the layer of liquid above it was wedge-shaped. Reflection was measured in two different liquids at angles close to the angle of normal incidence. The arangement is shown in a figure on p 248, where 1 is the exit slit of a monochromator UM-2, 2 is a lens, 3 is a bath with the sample and 4 is a photoelement. The liquids used were methyl, alcohol, benzene and toluene. To calculate the absolute values of the reflection coefficients of the metal R_1 and R_2 in liquids No. 1 and No. 2 the

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authors used the expressions given by Eqs (1) and (2), which include corrections for reflection at the air-liquid and liquid-air boundaries. In Eqs (1) and (2) n_1 and n_2 are the refractive indices of the two liquids; J_1 and J_2 are readings of a galvanometer (connected to the photoelement) obtained on reflection from the metal sample in air and in a liquid, respectively; R_0 is the reflectivity of the metal in air. The refractive and absorption indices (n and k) of the metal are given by Eqs (3) and (4). Using the technique just described the authors measured the optical constants of nickel, cobalt, copper, silver and aluminium (the latter in the form of a film). The results are given in a table on p 249. The error in measurements of n and k did not exceed 5-9%. The values obtained were found to agree with those reported earlier (Refs 5-7). The method described may also be used in the ultraviolet and infrared regions of the spectrum. There are 1 figure, 1 table and 7 references, 4 of which are Soviet, 1 German, 1 English and 1 translation from German into Russian.

SUBMITTED: July 8, 1958

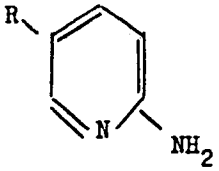
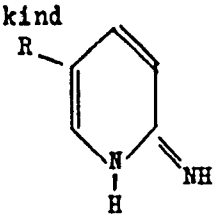
24(7),5(4) SOV/48-23-10-11/39

AUTHORS: Bogomolov, S. G., Bystritskaya, M. G., Kirillova, M. M.

TITLE: Characteristic Bands in the Pyridine Series

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1199-1201 (USSR)

ABSTRACT: The authors investigated the infrared- and ultraviolet absorption spectra of 16 heterocyclic compounds, one part of which had already been synthetized previously. Several of them were biologically active. The samples were subjected to an infrared spectropic analysis in form of emulsions in oil. (IKS-6-spectrometer with NaCl- and LiF-prisms), as well as to an ultraviolet analysis in form of a solution in ethyl alcohol by using a SF-4-spectrometer. For 2-aminopyridine and a number of its derivatives a tautomerism of the kind

a)  b)  is possible.

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Characteristic Bands in the Pyridine Series SOV/48-23-10-11/39

Form a is characterized in the range of high infrared frequences by the occurrence of the NH_2-absorption band; within the range of double-bonds a band with $\sim$1640 cm^{-1} (deformation oscillations of the NH_2 groups) may occur besides the absorption band of the pyridine ring ($\sim$1580 cm^{-1}). If the molecule is of the form b, only one band of the NH-valence oscillations, and in the range of the double bonds the band of the C=N-oscillations occurs. The data obtained for all 16 compounds are shown by a table extending over one and a half pages. The data of this table are discussed. There is 1 table.

ASSOCIATION: Sverdlovskiy meditsinskiy institut,Ural'skiy gos. universitet (Sverdlovsk Medical Institute of Ural State University)

Card 2/2

24.3200

22271
S/126/62/013/005/030/031
E073/E535

AUTHORS: Kirillova, M.M., Noskov, M.M. and Charikov, B.A.

TITLE: Influence of heat treatment on the optical properties of metallic layers

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962, 798-799

TEXT: The effect of heat treatment was investigated for 0.25-0.35 μ thick films of gold, copper, silver and cadmium deposited at a vacuum of 10^{-5} to 10^{-6} mm Hg onto a glass base at room temperature. The annealing was in vacuum at 110-120°C and in some cases up to 200°C. Before and after annealing, the following were determined: density (by measuring the thickness and weight), resistivity and the optical constants n and k, which were measured according to the method of J. R. Beattie (Phil. Mag., 1955, 46, 235) at the wavelengths 0.423, 0.542 and 0.550 μ in several points between 2 and 9 μ. Measurements have shown that:
1) Freshly deposited non-transparent layers of Ag, Au and Cu on glass have a density 5 to 10% lower than that of the cast metal.
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Influence of heat treatment ... S/126/62/013/005/030/031
E073/E535

The density increases after vacuum annealing for 10 to 15 hours at 110-120°C to the values given in the table. The metal with the lowest melting point, cadmium, did not show any change in density after annealing.

	Density, $g \cdot cm^{-1}$			Resistivity 10^{-17} CGSE		
	Initial state	Annealed	Massive	Initial state	Annealed	Massive
Gold	18.3	19.1	19.3	2.2	3.5	4.06
Copper	8.65	8.90	8.95	2.1	5.0	5.35
Silver	9.50	10.4	10.5	2.65	5.1	5.60

2) The refractive index n of gold and copper shows hardly any change, after annealing, for short-wave radiation (λ = 0.423 μ) but drops by a factor of 1.5 to 2 times in the long-wave part of the visible spectrum and in the infrared range. The attenuation index k increases approximately by 20% in the same range in which n decreases. The optical constants of cadmium

Card 2/4

change only insignificantly after annealing.
3) The changes in the optical constants correspond to a decrease by about 1.5 to 2 times in the absorption capacity A = 1 - R. The changes in the optical constants with annealing are virtually terminated after 2 to 3 hours but, for obtaining stable values of density and resistivity, the annealing had to be continued for 10 to 15 hours. Then, it can be assumed that the structure of the metal in the optical layer in the neighbourhood of the surface is satisfactorily normalised.
The normalising effect of the heat treatment is particularly noticeable on metals with a relatively high melting point, whilst metals with low melting points will deposit in vacuum at a sufficient initial density and the effect of heat treatment is negligible. Annealing has also little effect on the optical constants of gold and copper in the short-wave range of the visible spectrum in which lattice defects are not of great importance due to the quantum nature of the excitation of the electrons by light. Calculation of the classical depth of penetration $\delta = \lambda 2\pi k$ from the values of k yields the following values: $\delta = 0.0335\ \mu$ for $\lambda = 0.55\ \mu$ and $\delta = 0.0283\ \mu$ for $\lambda = 7\ \mu$ (0.35 μ thick annealed

gold). Since in the range 2-9 μ, k is almost proportional to the wavelength, the depth of penetration will be practically independent of the wavelength. In the near-infrared range the optical properties of gold can be approximately expressed by the formulae of Drude-Ziner and therefore, for an approximate estimation of the collision frequency, the relation $\gamma = 2nk\,\omega/1_{\Gamma}\, n^2 + k^2$ can be applied, from which we obtain $\gamma \sim 0.8 \cdot 10^{14}$. Prior to annealing, γ is about twice as high and δ is about 20% higher than in the normalised annealed state. There is 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: January 17, 1962

mirror surfaces and the ratio of the parallel and perpendicular intensities and phase differences of the polarized component were evaluated. Emerging from the analyser, the beam was focused on the slit of the infrared spectrometer type ИКС-12 (IKS-12). The ellipticity components were evaluated by the method of parallel polarizers. Almost complete data of n, k and the real ε_1 and imaginary ε_2, component dependency on frequency was tabulated at 0.5 μ intervals for Ti, Va and Au. Plots of reflectivity and dispersive power versus wavelength were also included. The above exp rimental data were used in a detailed theoretical analysis of relations existing between the dielectric permittivity and wavelength, using the elaborate method of approximating polynomials. Polynomials satisfying the experimental data gave the following values for the respective coefficients:

Titanium: $\varepsilon_1 = -6.24\lambda^{-4} + 3.48\lambda^{-2} - 57.2 + 4.62\lambda^2 - 0.0154\lambda^4$;

$\varepsilon_2 = 43.94\lambda^{-1} + 11.16\lambda + 0.20\lambda^3$; (6)

Optical properties of ...

S/126/62/013/006/002/018
E202/E492

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: January 17, 1962

4

Card 4/4

KIRILLOVA, M.M.; MOSKOV, M.M.; CHARIKOV, B.A.

Effect of heat treatment on the optical properties of metallic films. Fiz. met. i metalloved. 13 no.5:798-799 My '62. (MIRA 15:6)

1. Institut fiziki metallov AN SSSR.
(Metallic films—Optical properties)
(Annealing of metals)

S/126/63/015/002/031/033
E039/E435

AUTHORS: Kirillova, M.M., Charikov, B.A.

TITLE: The optical properties of titanium in the quantum transition regions

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.2, 1963, 315-316

TEXT: Knowledge of the resonant frequency of quantum transitions can be used in deciphering the complex energy spectrum of electrons in metals. Measurements were carried out in the range of wavelengths $0.4 < \lambda < 4.0\ \mu$ on two titanium mirrors prepared from commercial titanium type ВТ-1 (VT-1D). The method of measuring the refractive index n and absorption coefficient k from which are calculated $1 - \varepsilon = 1 - n^2 + k^2$ and $\sigma = nk\nu$ is as described in earlier work of the authors and their team. An incandescent lamp was used as a source. A СФ-5 (SF-5) spectrophotometer and ИКС-2 (IKS-2) infrared spectrometer were used as monochromators in the ranges 0.4 to 1.1 μ and 0.9 to 4.0 μ respectively. Radiation was detected by means of an optico-acoustic receiver in the infrared and a photocell in the visible. Values of n and k measured vary from n = 1.65 and k = 2.90

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The optical properties ...

at $\lambda = 0.475\mu$ to $n = 4.65$ and $k = 7.30$ at $\lambda = 4.0\mu$. A graph of σ against ν shows that quantum transitions begin at $\nu = 0.3$ eV ($\lambda = 4.0\mu$) and there are two resonant frequencies $\nu_1 = 0.85$ eV and $\nu_2 = 1.7$ eV ($\lambda_1 = 1.5\mu$ and $\lambda_2 = 0.8\mu$ respectively). The $I = f$ curve shows minima at 0.85 and 2.1 eV. In Ti the 3d, 4s and 4p bands overlap which makes the interpretation of results difficult. The transition energy found from the resonant frequencies ν_o^1 and ν_o^2 are near the energy gap between the 3d and 4p, and 4s and 4p levels in Ti. To explain the results it is necessary to obtain correlation with other data obtained from X-ray spectra experiments and optical and short wave investigations. There are 1 figure and 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: June 26, 1962

Card 2/2